Gram Reagent C: Crystal Violet

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification

1.1. Identification

Product form	:	Mixture
Product name	:	Gram Reagent C: Crystal Violet
Product code	:	SS-041C, SS-041C-EU, or SS-141C diluted with water

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	:	Gram staining
Use of the substance/mixture	:	Laboratory chemical

1.3. Details of the supplier of the safety data sheet

ELITechGroup Inc.
370 West 1700 South
Logan, UT 84321 - USA
T +1 (435) 752-6011 - F +1 (435) 752-4127
qara_ebs@elitechgroup.com - www.elitechgroup.com

1.4. Emergency telephone number

Emergency number	:	Contact your distributor or poison control center in your country. InfoTrac Emergency Response: Calls within the USA, phone: 1-800-535-5053. Calls outside the USA, phone: +1 352-323-3500 (call collect) Customer ID: #90104 (NOTE: this number is required when a customer calls into either phone number above).

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. Label elements

GHS US labeling

No labeling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
ethanol	(CAS-No.) 64-17-5	0.5 – 5	Flam. Liq. 2, H225 Carc. 1A, H350
C.I. basic violet 3	(CAS-No.) 548-62-9	< 1	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 Carc. 2, H351
methanol	(CAS-No.) 67-56-1	< 0.1	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT SE 1, H370
formaldehyde	(CAS-No.) 50-00-0	< 0.1	Flam. Gas 1, H220 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Acute Tox. 3 (Inhalation:gas), H331 Skin Corr. 1B, H314 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1A, H350

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Allow affected person to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/effects after skin contact : May cause an allergic skin reaction.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep away from ignition sources. Keep container closed when not in use. Protect from sunlight.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ethanol (64-17-5)		
ACGIH	ACGIH STEL (ppm)	1000 ppm
ACGIH	Remark (ACGIH)	URT irr
OSHA	OSHA PEL (TWA) (mg/m³)	1900 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

methanol (64-17-5)		
ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (ppm)	250 ppm
ACGIH	Remark (ACGIH)	Headache; eye dam; dizziness; nausea
OSHA	OSHA PEL (TWA) (mg/m³)	260 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm

formaldehyde (50-00-0)		
ACGIH	ACGIH TWA (ppm)	0.1 ppm
ACGIH	ACGIH STEL (ppm)	0.3 ppm
ACGIH	Remark (ACGIH)	URT & eye irr

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Personal protective equipment : Avoid all unnecessary exposure. Safety glasses. Gloves.

Hand protection : Wear protective gloves. Suitable gloves should be tested to EN 374. The glove material has to be impermeable and resistant to the product/the substance/the preparation. As the product is a preparation of several substances, the resistance and penetration time/breakthrough time of the glove material cannot be calculated/observed in advance and, therefore, has to be checked prior to the application. The following are recommended: materials - natural latex or nitrile; thickness - 4 to 6 mils (0.1 mm - 0.15 mm); minimum breakthrough time - 60 minutes.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection	:	Wear appropriate mask.
Environmental exposure controls	:	Avoid release to the environment.
Other information	:	Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	Purple
Odor	:	Odorless
Odor threshold	:	No data available
pH	:	≈ 4.3 (4 – 4.5)
Melting point	:	Not applicable
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	> 93.3 °C
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Vapor pressure	:	No data available
Relative density	:	No data available
Relative vapor density at 20 °C	:	No data available
Density	:	0.9958 g/cm³
Solubility	:	Water: No data available
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

C.I. basic violet 3 (548-62-9)	
LD50 oral rat	420 mg/kg (Rat, Experimental value, Oral)
LD50 dermal rabbit	> 2000 mg/kg body weight (Equivalent or similar to OECD 402, Rabbit, Experimental value, Dermal)
ATE US (oral)	420 mg/kg body weight

ethanol (64-17-5)	
LD50 oral rat	15010 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 14450 - 15560
LD50 dermal rabbit	> 15800 mg/kg body weight (Rabbit, Experimental value, Dermal)
LC50 Inhalation - Rat	125 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
ATE US (oral)	8300 mg/kg body weight
ATE US (vapors)	125 mg/l/4h
ATE US (dust, mist)	125 mg/l/4h

methanol (67-56-1)	
LD50 oral rat	1187 – 2769 mg/kg body weight (BASF test, Rat, Male / female, Experimental value, Aqueous solution, Oral, 7 day(s))
LC50 Inhalation - Rat	128 mg/l air (BASF test, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours))
ATE US (oral)	1187 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust, mist)	0.5 mg/l/4h

formaldehyde (50-00-0)	
LD50 oral rat	800 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male, Experimental value, 2% aqueous solution, Oral, 14 day(s))
ATE US (oral)	100 mg/kg body weight
ATE US (dermal)	300 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust, mist)	0.5 mg/l/4h

Skin corrosion/irritation : Not classified

pH: ≈ 4.3 (4 – 4.5)

Serious eye damage/irritation : Not classified

pH: ≈ 4.3 (4 – 4.5)

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Based on available data, the classification criteria are not met

Carcinogenicity : Not classified.

ethanol (64-17-5)	
IARC group	1 - Carcinogenic to humans

formaldehyde (50-00-0)	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	2 - Known Human Carcinogens

Reproductive toxicity : Not classified

Based on available data, the classification criteria are not met

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

ethanol (64-17-5)	
NOAEL (subchronic,oral,animal/male,90 days)	< 9700 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: EPA OPPTS 870.3100 (90-Day Oral Toxicity in Rodents)
NOAEL (subchronic,oral,animal/female,90 days)	> 9400 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: EPA OPPTS 870.3100 (90-Day Oral Toxicity in Rodents)

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects after skin contact : May cause an allergic skin reaction.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

C.I. basic violet 3 (548-62-9)	
LC50 fish 1	0.082 mg/l (96 h, Pimephales promelas, Static system, Fresh water, Experimental value, GLP)
EC50 Daphnia 1	0.24 – 0.5 mg/l Test organisms (species): Daphnia magna
ErC50 (algae)	0.025 – 0.8 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Estimated value)

ethanol (64-17-5)	
LC50 fish 1	14.2 g/l Test organisms (species): Pimephales promelas
NOEC (chronic)	9.6 mg/l Test organisms (species): Daphnia magna Duration: '9 d'

methanol (67-56-1)	
LC50 fish 1	15400 mg/l (EPA 660/3 - 75/009, 96 h, Lepomis macrochirus, Flow-through system, Fresh water, Experimental value, Lethal)
EC50 Daphnia 1	18260 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 96 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, Locomotor effect)
NOEC (chronic)	208 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

formaldehyde (50-00-0)	
LC50 fish 1	6.7 mg/l (96 h, Morone saxatilis, Static system, Salt water, Experimental value, Lethal)
EC50 Daphnia 1	5.8 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia pulex, Static system, Fresh water, Experimental value, Locomotor effect)
LC50 fish 2	62 (62 – 109) mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
ErC50 (algae)	4.89 – 6.61 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Nominal concentration)
NOEC chronic fish	≥ 48 mg/l Test organisms (species): Oryzias latipes Duration: '28 d'

12.2. Persistence and degradability

Gram Reagent C: Crystal Violet	
Persistence and degradability	Not established.

C.I. basic violet 3 (548-62-9)	
Persistence and degradability	Not readily biodegradable in water.

ethanol (64-17-5)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.8 – 0.967 g O_2/g substance
Chemical oxygen demand (COD)	1.7 g O_2/g substance
ThOD	2.1 g O_2/g substance
BOD (% of ThOD)	0.43

methanol (67-56-1)	
Persistence and degradability	Readily biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.6 – 1.12 g O_2/g substance
Chemical oxygen demand (COD)	1.42 g O_2/g substance
ThOD	1.5 g O_2/g substance

formaldehyde (50-00-0)	
Persistence and degradability	Readily biodegradable in water.

formaldehyde (50-00-0)	
Biochemical oxygen demand (BOD)	0.64 g O_2/g substance
Chemical oxygen demand (COD)	1.06 g O_2/g substance
ThOD	1.068 g O_2/g substance

12.3. Bioaccumulative potential

Gram Reagent C: Crystal Violet	
Bioaccumulative potential	Not established.

C.I. basic violet 3 (548-62-9)	
BCF fish 1	3.8 – 16 l/kg (6 week(s), Cyprinus carpio, Static system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	1.172 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

ethanol (64-17-5)	
BCF fish 1	1 (Other, 72 h, Cyprinus carpio, Static system, Fresh water, Read-across)
Partition coefficient n-octanol/water (Log Pow)	-0.31 (Experimental value)
Bioaccumulative potential	Not bioaccumulative.

methanol (67-56-1)	
BCF fish 1	1 – 4.5 (72 h, Cyprinus carpio, Static system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	-0.77 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

formaldehyde (50-00-0)	
BCF fish 1	< 1 (1 h, Flow-through system, Salt water, Weight of evidence)
Partition coefficient n-octanol/water (Log Pow)	0.35 (Calculated, KOWWIN, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

C.I. basic violet 3 (548-62-9)	
Surface tension	44.2 mN/m (1 %)
Partition coefficient n-octanol/water (Log Koc)	5.79 (log Koc, Experimental value)
Ecology - soil	Adsorbs into the soil.

ethanol (64-17-5)	
Surface tension	22.31 mN/m (20 °C, 100 %)
Partition coefficient n-octanol/water (Log Koc)	0.2 (log Koc, Experimental value)
Ecology - soil	Highly mobile in soil.

methanol (67-56-1)	
Surface tension	No data available in the literature
Partition coefficient n-octanol/water (Log Koc)	-0.89 – -0.21 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil.

formaldehyde (50-00-0)	
Surface tension	73 mN/m (20 °C, Aqueous solution, 7.5 g/l)
Ecology - soil	Not applicable (gas). Toxic to flora.

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

Transportation of Dangerous Goods

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Gram Reagent C: Crystal Violet
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

C.I. basic violet 3 (548-62-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

ethanol (64-17-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

methanol (67-56-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	5000 lb
SARA Section 313 - Emission Reporting	1 %

formaldehyde (50-00-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
SARA Section 313 - Emission Reporting	1 %

15.2. International regulations

CANADA

C.I. basic violet 3 (548-62-9)
Listed on the Canadian DSL (Domestic Substances List)

ethanol (64-17-5)
Listed on the Canadian DSL (Domestic Substances List)

methanol (67-56-1)
Listed on the Canadian DSL (Domestic Substances List)

formaldehyde (50-00-0)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

ethanol (64-17-5)
Listed on IARC (International Agency for Research on Cancer)

methanol (67-56-1)
Listed on EPA Hazardous Air Pollutant (HAPS)

formaldehyde (50-00-0)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on EPA Hazardous Air Pollutant (HAPS)

15.3. US State regulations

This product can expose you to C.I. basic violet 3 and formaldehyde, which are known to the State of California to cause cancer, and methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

C.I. basic violet 3 (548-62-9)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	
U.S. - California - Proposition 65 - Other information		No NSRL data available at www.P65Warnings.ca.gov		

methanol (67-56-1)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	Yes	No	No	47000 µg/day
U.S. - California - Proposition 65 - Other information		NSRL: 23000 µg/day (oral); 47000 µg/day (inhalation)		

formaldehyde (50-00-0)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	40 µg/day

ethanol (64-17-5)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

methanol (67-56-1)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List

formaldehyde (50-00-0)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Other information : None.

Full text of H-phrases:

H220	Extremely flammable gas
H225	Highly flammable liquid and vapor
H301	Toxic if swallowed
H302	Harmful if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H331	Toxic if inhaled
H341	Suspected of causing genetic defects
H350	May cause cancer
H351	Suspected of causing cancer
H370	Causes damage to organs

SDS US Custom - EBS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Reason For Change: updated to latest GHS format to meet compliance.